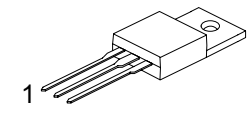
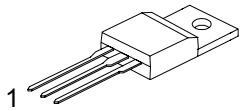
# 2SC5353

**NPN SILICON TRANSISTOR**

## HIGH VOLTAGE NPN TRANSISTOR




TO-220




TO-220F

*Pb-free plating product number: 2SC5353L

### ■ DESCRIPTION

Switching Regulator and High Voltage Switching Applications
High-Speed DC-DC Converter Applications

### ■ FEATURES

* Excellent switching times: $t_R$ = 0.7μs$_{(MAX)}$, $t_F$ = 0.5μs $_{(MAX)}$
* High collectors breakdown voltage: $V_{CEO}$ = 800 V

### ■ ORDERING INFORMATION

| Order Number | | Package | Pin Assignment | | | Packing |
|---|---|---|---|---|---|---|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| 2SC5353-TA3-T | 2SC5353L-TA3-T | TO-220 | B | C | E | Tube |
| 2SC5353-TF3-T | 2SC5353L-TF3-T | TO-220F | B | C | E | Tube |

2SC5353L-TA3-T
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) T: Tube
(2) TA3: TO-220, TF3: TO-220F
(3) L: Lead Free Plating, Blank: Pb/Sn

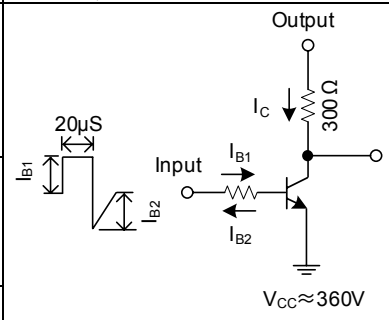

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## ■ ABSOLUTE MAXIMUM RATING (Tc = 25°C)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|---|---|---|---|---|
| Collector-Base Voltage | | $V_{CBO}$ | 900 | V |
| Collector-Emitter Voltage | | $V_{CEO}$ | 800 | V |
| Emitter-Base Voltage | | $V_{EBO}$ | 7 | V |
| Collector Current | DC | $I_C$ | 3 | A |
| | Pulse | $I_{CP}$ | 5 | |
| Base Current | | $I_B$ | 1 | A |
| Collector Power Dissipation | Ta = 25°C | $P_D$ | 2.0 | W |
| | $T_C$ = 25°C | | 25 | |
| Junction Temperature | | $T_J$ | +150 | °C |
| Storage Temperature | | $T_{STG}$ | -40 ~ +150 | °C |

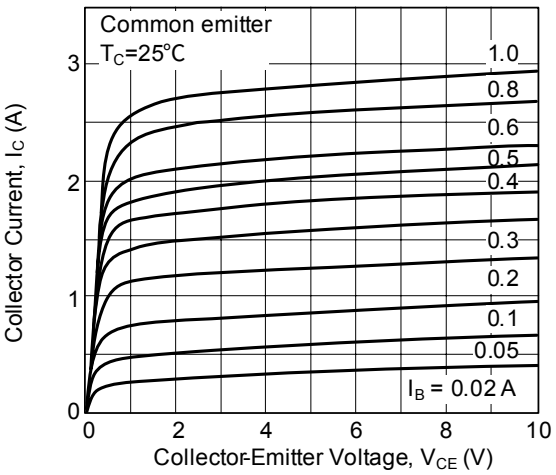
Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

## ■ ELECTRICAL CHARACTERISTICS (Tc = 25°C)

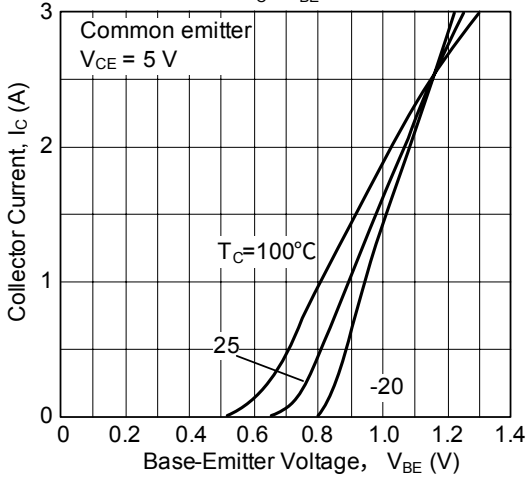
| PARAMETER | | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | | $BV_{CBO}$ | $I_C$=1 mA, $I_E$ = 0 | 900 | | | V |
| Collector-Emitter Breakdown Voltage | | $BV_{CEO}$ | $I_C$=10 mA, $I_B$ = 0 | 800 | | | V |
| Collector Cut-off Current | | $I_{CBO}$ | $V_{CB}$=720V, $I_E$= 0 | | | 100 | μA |
| Emitter Cut-off Current | | $I_{EBO}$ | $V_{EB}$=7V, $I_C$= 0 | | | 10 | μA |
| DC Current Gain | | $h_{FE(1)}$ | $V_{CE}$=5 V, $I_C$=1 mA | 10 | | | |
| | | $h_{FE(2)}$ | $V_{CE}$=5 V, $I_C$=0.15 A | 15 | | | |
| Collector-Emitter Saturation Voltage | | $V_{CE(SAT)}$ | $I_C$=1.2 A, $I_B$=0.45 A | | | 1.0 | V |
| Base-Emitter Saturation Voltage | | $V_{BE(SAT)}$ | $I_C$=1.2 A, $I_B$=0.24 A | | | 1.3 | V |
| Switching time | Rise time | $t_R$ |  | | | 0.7 | μS |
| | Storage time | $t_{STG}$ | | | | 4.0 | |
| | Fall time | $t_F$ | $I_{B1}$ = 0.24 A, $I_{B2}$ = −0.48 A, duty cycle ≤ 1% | | | 0.5 | |

## ■ TYPICAL CHARACTERISTICS

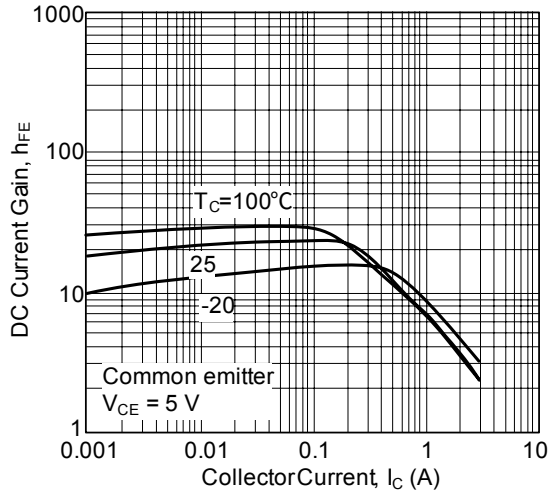
$I_C$ - $V_{CE}$



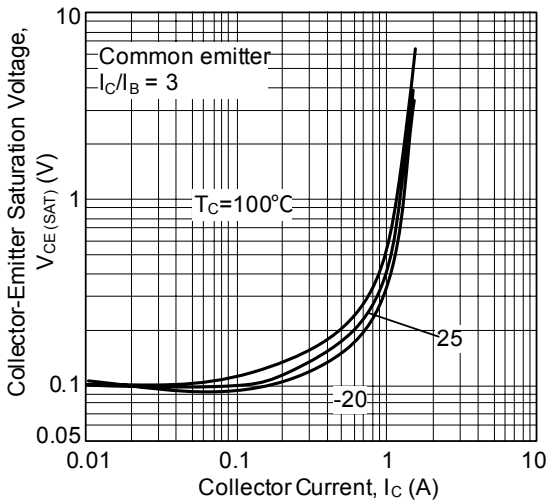

$I_C$ - $V_{BE}$



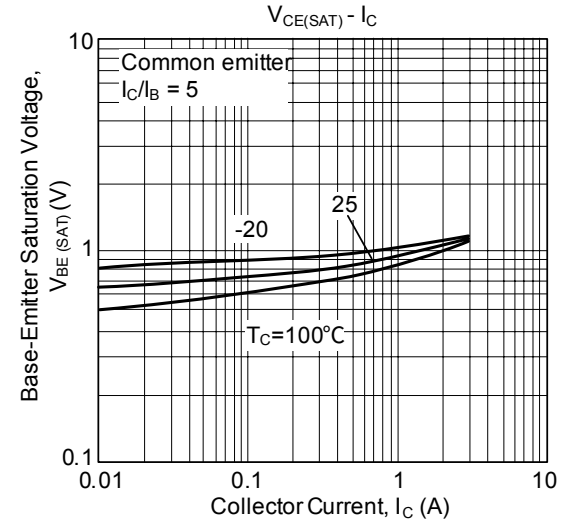

$h_{FE}$ - $I_C$



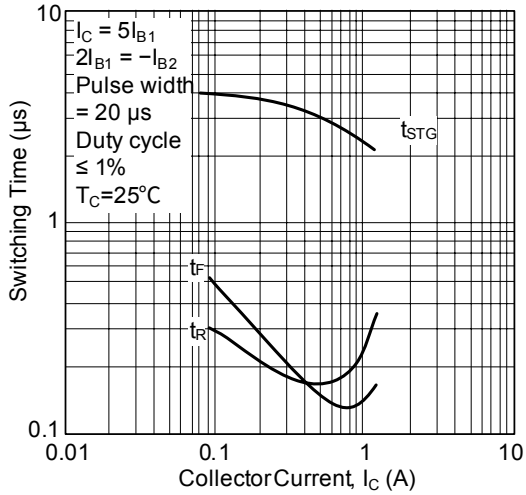

$V_{CE(SAT)}$ - $I_C$



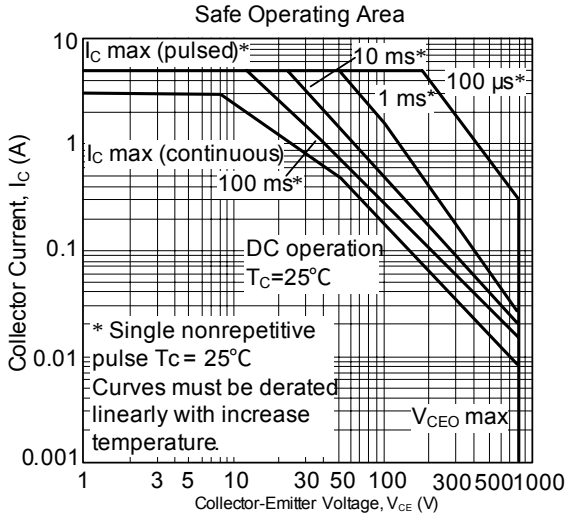

$V_{CE(SAT)}$ - $I_C$

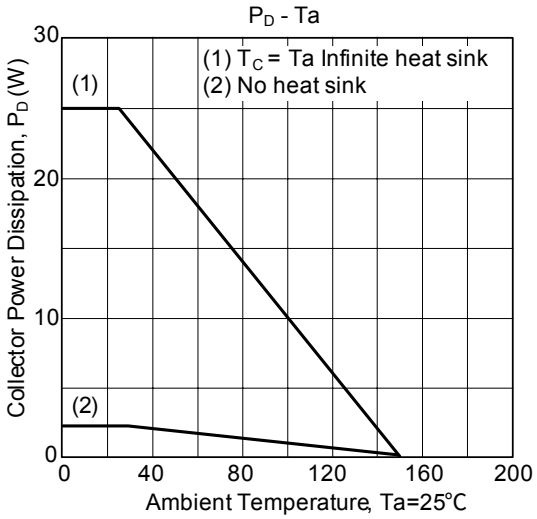



Switching Characteristics



## ■ TYPICAL CHARACTERISTICS(Cont.)




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